

in a low wall of brown sandstone. *Cystodium falcatum*, the holly fern which I have mentioned several times in previous years, still attracts attention with its shiny bright green fronds and exotic appearance. The alpine lady fern, *Atherium alpestre* var. *americanum*, collected on Mt. Rainier and sent to me several years ago, appears perfectly happy in its new habitat and has increased to several good sized clumps. *Blechnum spicant* (Deer fern) has again developed fertile fronds; last year there were only sterile fronds on this northwestern fern. The small "Mexican deer fern" which was sent to me last year went through the winter without any protection and is now larger than when it was received.

The afternoon provided ideal weather conditions and those who came remained until late afternoon sitting in the shade to discuss ferns and partake of refreshments provided by Mrs. Dole. Attendance 9.

W. HERBERT DOLE

PROCEEDINGS OF THE CLUB

MINUTES OF THE MEETING OF APRIL 15, 1942

The meeting was called to order at 3.30 p.m. by the second vice-president, Dr. Chandler, in the Members' Room of the New York Botanical Garden. Twenty-eight members and friends were present.

The minutes of the preceding meeting were accepted as read.

The first portion of the scientific program was an illustrated report by Mr. Libero Ajello on a New Chytrid Genus, *Polychytrium*. The Speaker's abstract follows.

Polychytrium aggregatum is a new, polycentric, saprophytic species of the family Cladochytriaceae which occurs in the decaying vegetation of bogs in the ridges of Bearfort Mountain, Passaic County, New Jersey. It has a coarse, richly branched rhizomycelium which becomes yellowish-brown at maturity, and lacks spindle organs or intercalary enlargements. The sporangia are smooth or tuberculate and produce spherical, posteriorly uniflagellate zoospores which lack a conspicuous refractive globule but include a prominent opaque lunate body. The sporangia dehisce by the deliquescence of the tip of the exit tube or papilla. Dormant thick-walled resting spores have not been observed, but the irregular tuberculate yellowish-brown sporangia are strikingly similar to the resting spores of many Cladochytriaceous species. However, they produce zoospores directly without going through a dormant period.

The second talk was given by Dr. Edwin Matzke who spoke on The Microscopic Anatomy in the Identification of the Commercial White Pines. This was illustrated with slides and specimens. The speaker's abstract follows :

There are three common commercial species of white pine growing in the the United States: the northern white pine, *Pinus Strobus*, the western or Idaho white pine, *P. monticola* and the sugar pine, *P. Lambertiana*. In general these trees are similar ; the northern pine is distinguished from the others by its finer needles, while the sugar pine can be told by its long cones.

The wood of these three species is also much alike in its gross as well as in its microscopic characters. The texture is somewhat coarser in the sugar pine, and the resin ducts are larger and darker in color. Sugar pine also has the largest tracheids, northern white pine the smallest.

The most diagnostic microscopic difference between these three species is the shape of the pits of the ray parenchyma cells. They are large and oblong in *P. Strobus*, small, diagonally elongated and often apiculate or lemon-shaped in *P. Lambertiana*, and intermediate between these two types in *P. monticola*.

In many ways, microscopically as well as macroscopically, the western white pine is intermediate between the other two. This is also true of its distribution. However, other species also undoubtedly enter into this series.

The meeting was adjourned at 4.35 p.m. to be followed by a tea served by friends at the Garden.

Respectfully submitted,

HONOR M. HOLLINGHURST
RECORDING SECRETARY

MINUTES OF THE MEETING OF MAY 5, 1942

The meeting was called to order at 8.20 p.m. by the second vice-president, Dr. Chandler, at Schermerhorn Hall, Columbia University. Forty members and friends were present.

The minutes of the preceding meeting were accepted as read.

The following were elected unanimously to annual membership :

Dr. V. E. Brown, Taylor University, Upland, Indiana
Dr. Wayne Manning, 14 Adare Place, Northampton, Mass.
Dr. Ernest Ball, Osborn Botanical Laboratory, New Haven, Conn.

The resignations of the following were accepted with regret .

Dr. D. A. McLarty, Dartmouth College, Hanover, N. H.
Dr. George C. Wood, 4430 Tibbet Avenue, Riverdale, N. Y.
Dr. Walter T. Bedell, West Winding, Poughkeepsie, N. Y.

The scientific speaker of the evening was introduced by Dr. Robbins. Dr. Beaman Douglas spoke on Botany in An Art Museum and illustrated his talk with some very fine Kodachrome slides.

The meeting was adjourned at 9.30 p.m. and was followed by a tea served by members of the Columbia University Botany Department.

Respectfully submitted,

HONOR M. HOLLINGHURST
RECORDING SECRETARY

MINUTES OF THE MEETING OF MAY 20, 1942

The meeting was called to order at 3.30 p.m. in the Members' Room of the New York Botanical Garden by the second vice-president, Dr. Chandler. The minutes of the preceding meeting were accepted as read.

The following were elected unanimously to annual membership:

William E. H. Schneider, Jr., 90 Engle Street, Englewood, N. J.
Prof. Seville Flowers, University of Utah, Salt Lake City, Utah
T. Monroe Kildow, Box 520, Tiffin, Ohio

The following was unanimously elected associate member:

Eleanor Ruth Witkus, 61-19 Grand Avenue, Maspeth, N. Y.

The resignations of the following were accepted with regret:

Don. E. Eyles, Memphis, Tenn.
Clifford S. Leonard, 31 Cliff Street, Burlington, Vt.

In response to the question raised regarding the progress of the committee on the per capita cost of membership in the Club, Dr. Dodge stated that he was awaiting a report from the Treasurer.

Dr. Bold moved that the Treasurer be instructed to pay for the 75th Anniversary Celebration Banquet dinners of the officially appointed delegates and speakers from outside the metropolitan area. This was seconded by Dr. Karling and passed by the Club.

The chairman of the 75th Anniversary Committee, Dr. Karling, announced that 97 institutions had appointed delegates to the meetings.

The scientific speaker of the afternoon was Dr. W. H. Camp who spoke on "The Genetic Structure of Populations and the Delimitation of Species."

Following the discussion of the talk, tea was served by friends at the Garden.

Respectfully submitted,

HONOR M. HOLLINGHURST
RECORDING SECRETARY

MINUTES OF THE MEETING OF OCTOBER 6, 1942

The meeting was called to order at 8.40 p.m. at the Brooklyn Botanic Garden by the President, Dr. C. Stuart Gager. Thirty friends and members were present. The minutes of the preceding meeting were accepted as read.

The following was unanimously elected a sustaining member :

Thomas C. Desmond, 94 Broadway, Newburgh, N. Y.

The following were elected unanimously to annual membership :

Gladys Boughton, 448 Washington Street, Brooklyn, N. Y.

Margaret S. Rogers, 20 Haslet Avenue, Princeton, N. J.

Dr. F. L. Wynd, University of Illinois, Urbana, Ill.

Dr. Arnold Rocha, Rua Angelo Agostino, 18, Rio de Janeiro, Brazil

Dr. Selman A. Waksman, N. J. Agric. Exper. Sta., New Brunswick, N. J.

Dr. Joseph Austin Miller, 364 Prospect Street, South Orange, N. J.

Dr. John N. Martin, 507 Welch Avenue, Ames, Iowa

Nettie M. Sadler, 503 Allen Street, Syracuse, N. Y.

Dr. William A. Beck, University of Dayton, Dayton, Ohio

Clarence R. Hanes, Schoolcraft, Mich.

Dr. Thomas S. Stewart, 18th and Rittenhouse Square, Phila., Pa.

Francoise A. Kelz, 31 Dobbs Terrace, Scarsdale, N. Y.

Joseph Ravizza, 312 Stanley Street, New Britain, Conn.

Arthur M. Scott, 7035 Chestnut Street, New Orleans, La.

Rev. F. J. Mahoney, S.J., Regis College, Denver, Col.

Mrs. George H. Sinden, Vassar College, Poughkeepsie, N. Y.

Transfer from annual to associate membership was approved for :

Dr. Alexander V. Tolstouhov, 24 Arden Street, New York City

The following resignations were accepted with regret :

Fred. A. Barkley, Montana State University, Missoula, Mont.

Helen Berdan, London, Ont.

Mrs. Herbert Richards, 370 Riverside Drive, N. Y.

Walter J. Harmer, 100 West 80th Street, N. Y.

Anna E. Lofgren, 575 West 172nd St., N. Y. C.

Mrs. R. A. Wetzel, 218 Tecumseh Avenue, Mt. Vernon, N. Y.

Gretchen D. Taylor, 127 Prospect Place, South Orange, N. J.
Mrs. Fitz-Henry Paine, Abington, Conn.

A brief report on the success of the 75th Anniversary Celebration was given by the chairman of the Celebration Committee, Dr. Karling, who thanked the members of the institution in the metropolitan area for their assistance and cooperation in making the Celebration a success. It was moved by Dr. Rickett that the chairman might include this report in a foreword to the issue of *TORREYA* covering the Celebration. This was seconded by Dr. Dodge and passed.

With reference to the members of the Club who are now in the armed forces, Dr. Whaley moved that the Club suspend or impose a moratorium on their dues so that these members might remain in good standing for the duration. This was seconded and passed.

The scientific program of the evening then proceeded with reports by several members on their activities during the past summer.

The meeting was adjourned at 9.40 p.m. The Club then enjoyed refreshments served by members at the Garden.

Respectfully submitted,

HONOR M. HOLLINGHURST
RECORDING SECRETARY

MINUTES OF THE MEETING OF OCTOBER 21, 1942

The meeting was called to order at 3.30 p.m. by the second vice-president, Dr. Clyde Chandler, in the Members' Room of the Museum Building of the New York Botanical Garden. Twenty-nine members and friends were present.

The minutes of the preceding meeting were accepted as read.

The following was unanimously elected an associate member:

Rev. James J. Hanlon, 328 West 14th Street, New York City

The scientific program of the afternoon was presented by Dr. B. O. Dodge who gave an illustrated talk on "Hybrid Vigor or Heterocaryotic Vigor in the Fungi." The speaker's abstract follows:

Continuation of the work on heterocaryotic vigor has been made possible by a grant in aid by the American Philosophical Society and by assistance provided by Dr. W. J. Robbins from private funds advanced for researches

on growth substances. It has been previously reported that certain dwarf races of *Neurospora tetrasperma* which grow very slowly by themselves seem to act in a complementary manner to stimulate growth in other rather slow-growing races, and vice-versa, so that the heterocaryotic mycelia, or races, grow up to two or three times as rapidly as does either of the individual components. A rather slow growing race C4, was crossed with a dwarf race, No. 16, and many ascospores had been isolated at random. Cultures from these individual ascospores showed that the factors for heterocaryotic vigor seemed to be heritable. Certain questions arose, however, which indicated that random selections from dispersed ascospores was not the most desirable method of procedure. The present work has consisted in the isolation of the four spores from individual asci, or isolation of the full complement of spores whenever other than four spores were delimited. All the spores from 131 asci were isolated and grown in culture separately. Of these 118 asci contained four spores, except two or three which contained five spores. Ten asci contained two normal sized spores and one larger spore. Two asci contained two abnormally large spores and one contained a single giant spore. In addition, three of the four spores of 39 asci were also isolated and grown in culture. It was found that 35 of the 118 asci which had four spores showed that all four spores developed similar cultures which grew vigorously and all had perithecia. Thirty-five others showed a two and two pattern in which two grew vigorously and produced perithecia, while the other two grew vigorously but very few, if any, perithecia matured. Forty asci showed a two and two distribution, two cultures growing vigorously, producing an abundance of ascocarps, while two were dwarfs. These were called double dwarfs because so far as tested they have shown that two nuclei of both sexes were present because they fruited with both of the tester strains. The other asci from which the components were grown showed various sorts of irregularities which have not as yet been analyzed. In some cases all the spores were clearly unisexual, as shown by tests.

The advantage in using races of *Neurospora tetrasperma* for this work over an obligately heterothallic species such as *N. crassa* or *N. sitophila* is that in the latter forms the nuclei of the opposite sex tend to remain apart even in mixed cultures so that it is difficult to obtain a heterocaryotic race by growing two individual unisexual races together in a culture; with *N. tetrasperma* one has no difficulty at all in obtaining heterocaryotic races by growing two individual races together. In this way it is possible to compare not only the morphological characters exhibited by unisexual or component races as compared with a heterocaryotic race composed of the same two individual races, but also their comparative growth rates can be accurately measured.

In order to secure fairly accurate growth rates of a large number of individual races a modification of what we are calling the Beadle and Tatum tubes are used.

The individual components of 80 bisexual races representing the full inheritance of 20 asci have been obtained by plating out conidia, hyphal frag-

ments, or in the case of the double dwarfs, minute colonies. The growth rates of a number of bisexual races and of their individual components have been measured. While this work is only partially completed, there is evidence that the growth rates are probably not determined by single pairs of factors, although it is clear that such factors exist and that they are inherited in a Mendelian fashion. Individual homocaryotic races have been obtained which show a higher growth rate.

Following the talk, Dr. Mary Schmidt showed some of the experimental material. The meeting was adjourned at 4:35 p.m. Tea was then served by friends at the Garden.

Respectfully submitted,

HONOR M. HOLLINGHURST
RECORDING SECRETARY

NEWS NOTES

The Council of the Torrey Botanical Club has decided to publish the papers presented at the Seventy-fifth Anniversary Celebration in the 1943 volume of *TORREYA*. This volume will consist exclusively of these papers and of the Proceedings of the Club.

In furtherance of the effort to conserve quinine and seek for supplies of cinchona bark from Tropical America, Norman Taylor, the director of Cinchona Products Institute, of New York, is leaving soon for a survey of plantations and wild sources of bark. The trip, which includes the region from southern Mexico to Bolivia, has been authorized by the Board of Commissioners for the Netherlands East Indies. The chief object is to cooperate in the war effort both with governmental agencies and manufacturers so that adequate supplies of cinchona bark may be available.

A \$1,000.00 fellowship for 1943-1944 is offered by Sigma Delta Epsilon, the Graduate Women's Scientific Fraternity. Applications and reference statements, both in triplicate, should be submitted before March 1, 1943, to the Fellowship Board.

Women with the equivalent of a Master's degree, conducting research in the mathematical, physical or biological sciences, who need financial assistance to complete their work for the doctorate,